

**DANISH METEOROLOGICAL INSTITUTE**

MINISTRY OF TRANSPORT

**———— TECHNICAL REPORT ————**  
**01-20**

**Nordic Climate Data Collection 2001**

**An update of:  
NACD, REWARD, NORDKLIM and NARP  
datasets, 1873-2000**

**Version 0**

Peter Viskum Jørgensen



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# 1. Foreword

## IMPORTANT !

The current version 0 is a preliminary release of the report, which will be reviewed by the NARP/NORDKLIM project participants in June 2002.

## **Version 1 is expected to be released later this year**

This version will include more data descriptions, particularly about Greenland data, and more values might be interpolated and added in the *Corrected* dataset.

Timeseries referred to

PF = Poul Frich

JC = John Cappelen

EVL = Ellen Vaarby Laursen

Months are referred to by *year/month number* (ex. 1981/03 = March 1981).

22 May 2002

Peter Viskum Jørgensen, PhD, MSc.

Weather and Climate Information Division

## 2. Introduction

The present report is *collection* of **monthly data** from **Danish, Faroe and Greenland stations**. Some of the data for these stations have previously been published in Nordic climate projects like NACD, REWARD, NORDKLIM and NARP.

The collection/report contain of 3 different datasets:

**1) NARP2000:**

This is a collection of all data previously collected within the NACD, REWARD, NORDKLIM and NARP project, and updated to include *up to year 2000*. The time-series are briefly described. Some of the data have previously been published in DMI Technical Reports or project reports and some are unpublished

**2) Observed:**

Many of the series are not very well documented, and the quality of them therefore will remain uncertain. Therefore it was decided to generate an *Observed* dataset based strictly on the values available in the “monthly” database at DMI.

**3) Corrected:**

In the third dataset, Corrected, some of holes in the observed dataset have been filled by interpolation with other stations in order to make the Danish contribution to the Nordic dataset as homogenous and coherent as possible. The corrected dataset represent the best estimate of values for the station included, and also a reproducible and documented dataset. Naturally, it is carefully described in this report where data have been calculated and how this was done (by interpolation or regression with one or more neighbouring stations).

The current report should be seen as a first effort to fill the holes, with a clear intention that as many holes as possible should be filled later, and new versions of this report published accordingly.

The data parameters include Mean Temperature, Minimum Temperature, Maximum Temperature, Pressure, Precipitation, Maximum Daily Precipitation, Number of days with Snow and Cloud Cover.

### 3. Data

#### Station Overview

	STATION	ST.NO	NACD	REWARD	NORDKLIM	NARP
1	Hammerodde Fyr	6193	X	X	X	
2	Vestervig	21100	X	X	X	
3	Nordby	25140	X	X	X	
4	Tranebjerg	27080	X	X	X	
5	København	06186	X	X	X	
6	Torshavn	6011	X	X	X	X
7	Strond Kraftstation	33054				X
8	Upernavik	4210	X	X		X
9	Illulissat	4221	X	X		X
10	Nuuk	4250	X	X		X
11	Narsarsuaq	4270	X	X		X
12	Danmarkshavn	4320	X	X		X
13	Ittoqqortoormiit	4339	X	X		X
14	Tassilaq	4360	X	X		X

#### Dataset Periods and Elements

NACD 1890 - 1990 : Elements 101, 401, 601, 701 and 801.

REWARD 1873 - 1995: Elements 111, 112, 121, 122, 602

NORDKLIM & NARP 1873-1999: Elements 101, 111, 112, 121, 122, 401, 601, 602, 701 & 801

In the following tables an overview of the three datasets (NARP2000, Observed and Corrected) is given in the form of tables showing the data series extension for each element and the number of holes/missing months for each station and each element.

# DATASET 1 : NARP2000

## Period

	Station	101	111	112	121	122	401	601	602	701	801
1	HAMM-06193	1890-2000	1890-2000	1890-2000	1890-2000	1890-2000	1890-2000	1890-2000	1890-2000	1939-2000	1890-2000
2	VEST-21100	1890-2000	1890-2000	1890-2000	1890-2000	1890-2000	1890-1987	1890-2000	1890-2000	1939-2000	1890-2000
3	NORD-25140	1890-2000	1874-2000	1874-2000	1874-2000	1874-2000	1890-1987	1890-2000	1890-2000	1956-2000	1890-1999
4	TRAN-27080	1890-2000	1890-2000	1890-2000	1890-2000	1890-2000	NA	1890-2000	1890-2000	1948-2000	1890-1999
5	KOEB-06186	1890-2000	1890-2000	1890-2000	1890-2000	1890-2000	NA	1890-2000	1890-2000	1937-1997	1890-1995
6	TORS-06011	1890-2000	1873-2000	1873-2000	1873-2000	1873-2000	1890-2000	1890-2000	1890-2000	1939-2000	1890-2000
7	STRO-33054	NA	NA	NA	NA	NA	NA	1961-2000	1961-2000	NA	NA
8	UPER-4210	1873-2000	1890-2000	1890-2000	1890-2000	1890-2000	1890-2000	1890-1986	1949-1986	1938-1981	1890-1981
9	ILUL-4221	1873-2000	1894-2000	1890-2000	1890-2000	1890-2000	1890-2000	1890-1990	1890-1991	1938-1981	1890-1986
10	NUUK-4250	1890-2000	1890-2000	1890-2000	1890-2000	1890-2000	1890-2000	1890-2000	1921-2000	1942-1998	1890-2000
11	NARS-4270	1873-2000	1890-2000	1890-2000	1890-2000	1890-2000	1890-2000	1890-2000	1890-2000	1938-1999	1890-2000
12	DANM-4320	1949-2000	1949-2000	1949-2000	1949-2000	1958-2000	1949-2000	1949-2000	1949-2000	1957-2000	1949-2000
13	ITTO-4339	1924-2000	1924-2000	1924-2000	1949-2000	1958-2000	1923-2000	1949-2000	1949-2000	1993-2000	1923-2000
14	TASI-4360	1894-2000	1897-2000	1894-2000	1894-2000	1958-2000	1894-2000	1897-2000	1897-2000	1958-2000	1894-2000

## Missing Months

	Station	101	111	112	121	122	401	601	602	701	801	Total
1	HAMM-06193	6	0	0	0	0	1	4	0	0	14	25
2	VEST-21100	2	1	1	1	1	0	0	0	0	2	8
3	NORD-25140	3	1	1	1	1	0	0	0	2	3	12
4	TRAN-27080	2	0	0	0	0	NA	4	0	0	8	14
5	KOEB-06186	0	0	0	0	0	NA	0	1	0	1	2
6	TORS-06011	0	0	0	0	0	7	0	0	36	0	43
7	STRO-33054	NA	NA	NA	NA	NA	NA	3	3	NA	NA	6
8	UPER-4210	0	72	73	54	54	259	119	0	0	45	676
9	ILUL-4221	0	23	39	30	30	63	5	0	0	3	193
10	NUUK-4250	10	27	24	50	50	260	81	5	0	15	522
11	NARS-4270	0	50	50	25	25	26	27	15	12	26	256
12	DANM-4320	4	0	0	0	0	4	5	0	2	4	19
13	ITTO-4339	40	47	46	0	0	70	2	0	0	41	246
14	TASI-4360	14	12	12	24	24	57	16	12	0	14	185
	<b>TOTAL</b>	<b>91</b>	<b>233</b>	<b>246</b>	<b>185</b>	<b>185</b>	<b>747</b>	<b>266</b>	<b>36</b>	<b>52</b>	<b>176</b>	<b>2207</b>

Series Complete

Small Holes: <= 12 months missing

Large holes: > 12 month missing

## DATASET 2 : Observed

### Period

	Station	101	111	112	121	122	401	601	602	701	801
1	HAMM-06193	1953-2000	1953-2000	1953-2000	1953-2000	1953-2000	1954-2000	1953-2000	1953-2000	1957-2000	1953-2000
2	VEST-21100	1873-2000	1874-2000	1874-2000	1874-2000	1873-2000	1873-1987	1873-2000	1873-2000	1939-2000	1873-1999
3	NORD-25140	1871-2000	1874-2000	1873-2000	1874-2000	1873-2000	1871-1987	1871-2000	1871-2000	1956-2000	1872-1999
4	TRAN-27080	1872-2000	1873-2000	1873-2000	1872-2000	1872-2000	1872-1987	1872-2000	1872-2000	1948-2000	1872-1999
5	KOEB-06186	1860-2000	1861-2000	1861-2000	1861-2000	1861-2000	1860-1987	1860-1996	1860-1996	1937-1997	1861-1995
6	TORS-06011	1953-2000	1953-2000	1953-2000	1953-2000	1953-2000	1953-2000	1953-2000	1953-2000	1953-2000	1953-2000
7	STRO-33054	NA	NA	NA	NA	NA	NA	1931-2000	1931-2000	NA	NA
8	UPER-4210	1958-2000	1958-2000	1958-2000	1958-2000	1958-2000	1958-2000	1958-1984	1958-1984	1958-1981	1958-1981
9	ILUL-4221	1961-2000	1961-2000	1961-2000	1961-2000	1961-2000	1961-2000	1961-1990	1961-1990	1961-1981	1961-1984
10	NUUK-4250	1958-2000	1958-2000	1958-2000	1958-2000	1958-2000	1958-2000	1958-2000	1958-2000	1958-1981	1958-2000
11	NARS-4270	1961-2000	1961-2000	1961-2000	1961-2000	1961-2000	1961-2000	1961-2000	1961-2000	1961-1999	1961-2000
12	DANM-4320	1958-2000	1958-2000	1958-2000	1958-2000	1958-2000	1958-2000	1958-2000	1958-2000	1958-2000	1958-2000
13	ITTO-4339	1958-2000	1958-2000	1958-2000	1958-2000	1958-2000	1958-2000	1958-2000	1958-2000	1958-1980	1958-2000
14	TASI-4360	1958-2000	1958-2000	1958-2000	1958-2000	1958-2000	1958-2000	1958-2000	1958-2000	1958-2000	1958-2000

### Missing Months

	Station	101	111	112	121	122	401	601	602	701	801	Total
1	HAMM-06193	1	1	1	1	1	3	0	1	34	7	50
2	VEST-21100	3	5	4	4	4	0	0	3	32	2	57
3	NORD-25140	3	4	4	4	4	5	1	1	83	3	112
4	TRAN-27080	2	7	7	6	6	12	3	3	87	9	142
5	KOEB-06186	0	1	1	1	1	565	0	0	81	1	651
6	TORS-06011	5	5	5	5	5	5	9	9	22	5	75
7	STRO-33054	NA	NA	NA	NA	NA	NA	8	9	NA	NA	17
8	UPER-4210	46	17	17	44	43	52	15	15	1	2	252
9	ILUL-4221	4	3	3	4	4	108	48	54	1	30	259
10	NUUK-4250	1	0	0	1	1	1	7	7	0	8	26
11	NARS-4270	0	0	0	0	0	0	0	0	28	2	30
12	DANM-4320	5	5	5	5	5	5	5	5	53	5	98
13	ITTO-4339	4	2	4	4	4	5	19	20	158	5	225
14	TASI-4360	0	0	0	0	0	0	3	3	78	0	84
	<b>TOTAL</b>	<b>74</b>	<b>50</b>	<b>51</b>	<b>79</b>	<b>78</b>	<b>761</b>	<b>118</b>	<b>130</b>	<b>658</b>	<b>79</b>	<b>2078</b>



## DATASET 3 : Corrected

### Period

	Station	101	111	112	121	122	401	601	602	701	801
1	HAMM-06193	1875-2000	1875-2000	1875-2000	1875-2000	1875-2000	1875-2000	1875-2000	1875-2000	1939-2000	1875-2000
2	VEST-21100	1875-2000	1875-2000	1875-2000	1875-2000	1875-2000	1875-1987	1875-2000	1875-2000	1939-2000	1875-2000
3	NORD-25140	1875-2000	1875-2000	1875-2000	1875-2000	1875-2000	1875-2000	1875-2000	1875-2000	1956-2000	1875-1999
4	TRAN-27080	1875-2000	1875-2000	1875-2000	1875-2000	1875-2000	1875-2000	1875-2000	1875-2000	1948-2000	1875-2000
5	KOEB-06186	1875-2000	1875-2000	1875-2000	1875-2000	1875-2000	1923-2000	1875-2000	1875-2000	1937-2000	1875-2000
6	TORS-06011	1953-2000	1953-2000	1953-2000	1953-2000	1953-2000	1953-2000	1953-2000	1953-2000	1953-2000	1953-2000
7	STRO-33054	NA	NA	NA	NA	NA	NA			NA	NA
8	UPER-4210	1958-2000	1958-2000				1890-2000				
9	ILUL-4221	1961-2000	1961-2000								
10	NUUK-4250	1958-2000	1958-2000								
11	NARS-4270	1961-2000	1961-2000								
12	DANM-4320	1958-2000	1958-2000								
13	ITTO-4339	1958-2000	1958-2000								
14	TASI-4360	1958-2000	1958-2000								

### Missing Months

	Station	101	111	112	121	122	401	601	602	701	801	Total
1	HAMM-06193	0	0	0	0	0	0	0	0	2	1	3
2	VEST-21100	0	1	0	0	0	0	0	0	0	0	1
3	NORD-25140	0	0	0	0	0	0	0	0	0	2	2
4	TRAN-27080	0	3	3	2	2	0	0	0	0	0	10
5	KOEB-06186	0	0	0	0	0	0	0	0	0	0	0
6	TORS-06011	0	0	0	0	0	7	0	0	0	0	7
7	STRO-33054	NA	NA	NA	NA	NA	NA	NYD	NYD	NA	NA	NYD
8	UPER-4210	0	0	NYD	NYD	NYD	24	NYD	NYD	NYD	NYD	NYD
9	ILUL-4221	0	0	NYD	NYD	NYD	NYD	NYD	NYD	NYD	NYD	NYD
10	NUUK-4250	0	0	NYD	NYD	NYD	NYD	NYD	NYD	NYD	NYD	NYD
11	NARS-4270	0	0	NYD	NYD	NYD	NYD	NYD	NYD	NYD	NYD	NYD
12	DANM-4320	0	0	NYD	NYD	NYD	NYD	NYD	NYD	NYD	NYD	NYD
13	ITTO-4339	0	0	NYD	NYD	NYD	NYD	NYD	NYD	NYD	NYD	NYD
14	TASI-4360	0	0	NYD	NYD	NYD	NYD	NYD	NYD	NYD	NYD	NYD
	<b>TOTAL</b>			NYD	NYD	NYD	NYD	NYD	NYD	NYD	NYD	NYD

NA = Not Available, NYD = Not Yet Done

# SERIES COMPOSITION & NOTES OF HOLES

## 1. Hammerodde Fyr (HAMM) – 06193

The station at Hammerodde Fyr was started in 1953 (Brandt 1994: DMI-TR94-17) and it's still running. It was originally numbered st.32020 and acquired the synoptic number st.06193 in 1978. In the creation of the NACD series, Poul Frich used station 32030 Sandvig to cover the period from 1890-1953.

### Element 101

**NARP2000** : 1890 – 2000. PF Serie 88 (NACD) 1890-1990 + 6193 HAMM, DMI-db “monthly” 1991 – 2000. PF series consists of : 32030 Sandvig 1890 – 1971, 32020/6193 Hammerodde 1971 – 1987, 6193 HAMM 1987 – 1990.

**Observed**: 1953-2000, 6193/32020 HAMM DMI-db “monthly”

**Corrected**: 1875-2000, DMI-db “monthly”: Average (mean) of: 32030 Sandvig 1875-1971 & 6193/32020 1953-2000.

Details : Missing Data: 6 months in Narp2000 (1966/07, 1971/1-5), 1 month in Observed (1970/12).

In Corrected, these were filled by using 32030 and 32020 average.

### Element 111

**NARP2000** : 1890 – 2000. PF Serie 89 (REWARD) 1890-1995 + 6193 HAMM, DMI-db “monthly” 1996 – 2000, PF series consist of : 32030 Sandvig 1890 – 1971, 32020/6193 Hammerodde 1971 – 1987, 6193 HAMM 1987 – 1990.

**Observed**: 1953-2000, 6193/32020 HAMM DMI-db “monthly”

**Corrected**: 1875-2000, DMI-db “monthly”: Average (mean) of: 32030 Sandvig 1875-1971 & 6193/32020 1953-2000.

Missing Data: 0 months in Narp2000, 1 month in Observed (1970/12).

In Corrected, these were filled by using 32030 and 32020 average, but two new were introduced by increasing the period (1951/9+10). These two were filled by using values from 32025.

### Element 112

**NARP2000** : 1890 – 2000. PF Serie 90 (REWARD) 1890-1995 + 6193 HAMM, DMI-db “monthly” 1996 – 2000, PF series consist of : 32030 Sandvig 1890 – 1971, 32020/6193 Hammerodde 1971 – 1987, 6193 HAMM 1987 – 1990.

**Observed**: 1953-2000, 6193/32020 HAMM DMI-db “monthly”

**Corrected**: 1875-2000, DMI-db “monthly”: Average (mean) of: 32030 Sandvig 1875-1971 & 6193/32020 1953-2000.

Missing Data: 0 months in Narp2000, 1 month in Observed (1970/12).

In Corrected, these were filled by using 32030 and 32020 average, but two new were introduced by increasing the period (1951/9+10). These two were filled by using values from 32025.

### Element 121

**NARP2000** : 1890 – 2000. PF Serie 91 (REWARD) 1890-1995 + 6193 HAMM, DMI-db “monthly” 1996 – 2000, PF series consist of : 32030 Sandvig 1890 – 1971, 32020/6193 Hammerodde 1971 – 1987, 6193 HAMM 1987 – 1990.

**Observed**: 1953-2000, 6193/32020 HAMM DMI-db “monthly”

**Corrected**: 1875-2000, DMI-db “monthly”: Average (mean) of: 32030 Sandvig 1875-1971 & 6193/32020 1953-2000.

Missing Data: 0 months in Narp2000, 1 month in Observed (1970/12).

All filled in Corrected by using 32030 and 32020 average

### Element 122

**NARP2000** : 1890 – 2000. PF Serie 92 (REWARD) 1890-1995 + 6193 HAMM, DMI-db “monthly” 1996 – 2000, PF series consist of : 32030 Sandvig 1890 – 1971, 32020/6193 Hammerodde 1971 – 1987, 6193 HAMM 1987 – 1990.

**Observed**: 1953-2000, 6193/32020 HAMM DMI-db “monthly”

**Corrected**: 1875-2000, DMI-db “monthly”: Average (mean) of: 32030 Sandvig 1875-1971 & 6193/32020 1953-2000.

Missing Data: 0 months in Narp2000, 1 month in Observed (1970/12).

All filled in Corrected by using 32030 and 32020 average

### Element 401

**NARP2000** : 1890 – 2000. PF Serie 93 (NACD) 1890-1990 + 6193 HAMM, DMI-db “monthly” 1996 – 2000, PF series consist of : 32030 Sandvig 1890 – 1971, 32020/6193 Hammerodde 1971 – 1987, 6193 HAMM 1987 – 1990.

**Observed**: 1954-2000, 6193/32020 HAMM DMI-db “monthly”

**Corrected**: 1875-2000, DMI-db “monthly”: Average (mean) of: 32030 Sandvig 1875-1971 & 6193/32020 1953-2000.

Missing Data: 1 months in Narp2000 (1994/7), 3 months in Observed (1988/3, 1994/7+8).

All filled in Corrected by using values directly from 6190

**Element 601**

**NARP2000** : 1890 – 2000. PF Serie 94 (NACD) 1890-1990 + 6193 HAMM, DMI-db “monthly” 1996 – 2000, PF series consist of : 32030 Sandvig 1890 – 1971, 32020/6193 Hammerodde 1971 – 1987, 6193 HAMM 1987 – 1990.

**Observed:** 1953-2000, 6193/32020 HAMM DMI-db “monthly”

**Corrected:** 1875-2000, DMI-db “monthly”: Average (mean) of: 32030 Sandvig 1875-1971 & 6193/32020 1953-2000.

Missing Data: 4 months in Narp2000 (1948/04, 1951/7, 1953/5, 1966/7), 0 months in Observed.

All filled in Corrected by using the 32030 and 32020 average

**Element 602**

**NARP2000** : 1890 – 2000. PF Serie 95 (REWARD) 1890-1995 + 6193 HAMM, DMI-db “monthly” 1996 – 2000, PF series consist of : 32030 Sandvig 1890 – 1971, 32020/6193 Hammerodde 1971 – 1987, 6193 HAMM 1987 – 1990.

**Observed:** 1953-2000, 6193/32020 HAMM DMI-db “monthly”

**Corrected:** 1875-2000, DMI-db “monthly”: Average (mean) of: 32030 Sandvig 1875-1971 & 6193/32020 1953-2000.

Missing Data: 0 months in Narp2000, 1 months in Observed (1963/9).

Three months (1948/3, 1951/7 and 1952/12) are introduced after using the 32030 and 32020 average. These three were filled by using values from 32025.

**Element 701**

**NARP2000** : 1939 – 2000. No series number (NACD) 1890-1990 + 6193/32020 HAMM DMI-db “monthly”

**Observed:** 1954-2000, 6193/32020 HAMM DMI-db “monthly”

**Corrected:** 1939-2000, DMI-db “monthly”: Average (mean) of: 32030 Sandvig 1875-1971 & 6193/32020 1953-2000.

Missing Data: 0 months in Narp2000, 34 months in Observed (not listed).

34 months are still missing after using the 32030 and 32020 average. However, June, Juli, August and September months 1971 – 1977 had missing values, zeros inserted since all June, July, August and Sept 1939-2000 equal to zero.

Then 3 missing months are left (1952/1, 1953/5 and 1955/1) missing. The latter was filled using 32025. The remaining two cannot be filled. There are no 701 observations at all on Borholm for these months, all stations were tried.

**Element 801**

**NARP2000** : 1890 – 2000. PF Serie 97 (NACD) 1890-1990+ 6193 HAMM, DMI-db “monthly” 1996 – 2000, PF series consist of : 32030 Sandvig 1890 – 1971, 32020/6193 Hammerodde 1971 – 1987, 6193 HAMM 1987 – 1990.

**Observed:** 1953-2000, 6193/32020 HAMM DMI-db “monthly”

**Corrected:** 1875-2000, DMI-db “monthly”: Average (mean) of: 32030 Sandvig 1875-1971 & 6193/32020 1953-2000.

Missing Data: 14 months in Narp2000 (not listed), 7 months in Observed (1954/7, 1963/9, 1973/3+7, 1974/3+7+12).

6 months missing (1911/1, 1973/3+7, 1974/3+7+12) after using the 32030 and 32020 average.

The 1973/3+7 and 1974/3+7 were filled using values from 6190, the 1974/12 by an average of 6191 and 6199.

The values 1911/1 can not be filled. No 801 observations on Bornholm for this month, all stations tried.

## 2. Vestervig (VEST) – 21100

The station Vestervig started in 1872 (Brandt 1994: DMI-TR94-14) and it's still running. It has always had number 21100.

### Element 101

**NARP2000** : 1890 – 2000. PF Serie 100 (NACD) 1890 – 1990 + 21100 VEST, DMI-db “monthly” 1991 – 2000

**Observed**: 1873-2000, VEST DMI-db “monthly”.

**Corrected**: 1875-2000, VEST DMI-db “monthly”.

Missing Data: 2 months in Narp2000 (1962/6, 2000/1), 3 months in Observed (1962/6, 2000/1+2).

All filled in Corrected by monthly-based regression with 06052:

June:  $st21100 = 0.9943 * st06052 - 1.455$  ( $r^2 = 0.9616$ )

Jan:  $st21100 = 1.0718 * st06052 - 9.417$  ( $r^2 = 0.9880$ )

Feb:  $st21100 = 1.0474 * st06052 - 6.970$  ( $r^2 = 0.9953$ )

### Element 111

**NARP2000** : 1890 – 2000. PF Serie 101 (REWARD) 1890 – 1995 + 21100 VEST, DMI-db “monthly” 1996 – 2000

**Observed**: 1874-2000, VEST DMI-db “monthly”

**Corrected**: 1875-2000, VEST DMI-db “monthly”.

Missing Data: 1 month in Narp2000 (2000/1), 5 months in Observed (1924/5, 1962/6, 1970/12 and 2000/1+2).

4 months in corrected were missing. 3 of these (1970/12 and 2000/1+2) were filled using data from st06052 directly, but 1924/5 could not be filled. No data from nearby old climate stations have been digitized into monthly.

### Element 112

**NARP2000** : 1890 – 2000. PF Serie 102 (REWARD) 1890 – 1995 + 21100 VEST, DMI-db “monthly” 1996 – 2000

**Observed**: 1874-2000, VEST DMI-db “monthly”

**Corrected**: 1875-2000, VEST DMI-db “monthly”.

Missing Data: 1 months in Narp2000(2000/1), 4 months in Observed (1962/6, 1970/12 and 2000/1+2).

All filled in Corrected by using 06052 values directly.

### Element 121

**NARP2000** : 1890 – 2000. PF Serie 103 (REWARD) 1890 – 1995 + 21100 VEST, DMI-db “monthly” 1996 – 2000

**Observed**: 1874-2000, VEST DMI-db “monthly”

**Corrected**: 1875-2000, VEST DMI-db “monthly”.

Missing Data: : 1 months in Narp2000(2000/1), 4 months in Observed (1962/6, 1970/12 and 2000/1+2).

All filled in Corrected by using 06052 values directly.

### Element 122

**NARP2000** : 1890 – 2000. PF Serie 104 (REWARD) 1890 – 1995 + 21100 VEST, DMI-db “monthly” 1996 – 2000

**Observed**: 1873-2000, VEST DMI-db “monthly”

**Corrected**: 1875-2000, VEST DMI-db “monthly”.

Missing Data: : 1 months in Narp2000(2000/1), 4 months in Observed (1962/6, 1970/12 and 2000/1+2).

All filled in Corrected by using 06052 values directly.

### Element 401

**NARP2000** : 1890 – 1987. No series number (NACD) 1890 – 1987 + DMI-db “monthly” 1987 – 2000 St.No ?

**Observed**: 1873-1987, VEST DMI-db “monthly”

**Corrected**: 1875-1987, VEST DMI-db “monthly”.

Missing Data: 0 months in Narp2000, 0 months in Observed.

Suggestion: Continue from 1987-2000 using data from 06052 !!!

### Element 601

**NARP2000** : 1890 – 2000. PF Serie 106 (NACD) 1890 – 1990 + 21100 VEST, DMI-db “monthly” 1991 – 2000

**Observed**: 1873-2000, VEST DMI-db “monthly”

**Corrected**: 1875-2000, VEST DMI-db “monthly”.

Missing Data: 0 months in Narp2000, 0 months in Observed.

### Element 602

**NARP2000** : 1890 – 2000. PF Serie 107 (REWARD) 1890 – 1995 + 21100 VEST, DMI-db “monthly” 1996 – 2000

**Observed**: 1873-2000, VEST DMI-db “monthly”

**Corrected**: 1875-2000, VEST DMI-db “monthly”.

Missing Data: 0 months in Narp2000, 3 months in Observed (1950/1+4, 1954/1).  
All filled in Corrected by using the average of Bovbjerg 24020 and 21120 Erslev, the only digitized stations in the area.

**Element 701**

**NARP2000 :** 1939 – 2000. PF Serie 109 (NACD) 1939 – 1990 + 21100 VEST, DMI-db “monthly” 1991 – 2000.

**Observed:** 1939-2000, VEST DMI-db “monthly”

**Corrected:** 1939-2000, VEST DMI-db “monthly”.

Missing Data: 0 months in Narp2000, 34 months in Observed (not listed).

Most months june and juli in year 1970-1990 had missing values/missing zero's, so these were inserted. After this procedure, two months were missing (1955/3 and 1970/12) 1970/12 was filled using 06052 while 1955/3 was filled using the average of 06030, 06041 and 06060.

**Element 801**

**NARP2000 :** 1890 – 2000. PF Serie 110 (NACD) 1890 – 1990 + 21100 VEST, DMI-db “monthly” 1991 – 2000.

**Observed:** 1873-1999, VEST DMI-db “monthly”

**Corrected:** 1875-2000, VEST DMI-db “monthly”.

Missing Data: 2 months in Narp2000 (1962/5+6), 2 months in Observed (1962/5+6). Both were filled using values from 06052. Further the year 2000 was added by using 06052 values.

### 3. Nordby (NORD) – 25140

The station Nordby started in 1871 (Brandt 1994: DMI-TR94-13) and it's still running. It has always had number 25140.

#### Element 101

**NARP2000:** 1890 – 2000. PF Serie 115 (NACD) 1890 – 1990 + 25140 NORD, DMI-db “monthly” 1991 – 2000

**Observed:** 1873-2000, NORD DMI-db “monthly”.

**Corrected:** 1875-2000, NORD DMI-db “monthly”.

Missing Data: 3 months in Narp2000 (1993/12, 1944/1, 2000/1), same months in Observed (1993/12, 1944/1, 2000/1).

All filled using average values from stations 06080, 06081 and 25348.

#### Element 111

**NARP2000:** 1874 – 2000. PF Serie 116 (REWARD) 1890 – 1995 + 25140 NORD, DMI-db “monthly” 1996 – 2000

**Observed:** 1874-2000, NORD DMI-db “monthly”

**Corrected:** 1875-2000, NORD DMI-db “monthly”.

Missing Data : 1 month in Narp2000 (2000/1), 4 months in Observed (1970/12, 1993/12, 1994/1, 2000/1). All filled using average values from stations 06080, 06081 and 25348, except for 1970/12 which was filled using 06080 and 06081 only.

#### Element 112

**NARP2000:** 1874 – 2000. PF Serie 117 (REWARD) 1890 – 1995, 25140 NORD, DMI-db “monthly” 1996 – 2000

**Observed:** 1874-2000, NORD DMI-db “monthly”

**Corrected:** 1875-2000, NORD DMI-db “monthly”.

Missing Data : 1 month in Narp2000 (2000/1), 4 months in Observed (1970/12, 1993/12, 1994/1, 2000/1). All filled using average values from stations 06080, 06081 and 25348, except for 1970/12 which was filled using 06080 and 06081 only.

#### Element 121

**NARP2000:** 1874 – 2000. PF Serie 118 (REWARD) 1890 – 1995 + 25140 NORD, DMI-db “monthly” 1996 – 2000

**Observed:** 1874-2000, NORD DMI-db “monthly”

**Corrected:** 1875-2000, NORD DMI-db “monthly”.

Missing Data: : 1 month in Narp2000 (2000/1), 4 months in Observed (1970/12, 1993/12, 1994/1, 2000/1). All filled using average values from stations 06080, 06081 and 25348, except for 1970/12 which was filled using 06081 only.

#### Element 122

**NARP2000:** 1874 – 2000. PF Serie 119 (REWARD) 1890 – 1995 + 25140 NORD, DMI-db “monthly” 1996 – 2000

**Observed:** 1873-2000, NORD DMI-db “monthly”

**Corrected:** 1875-2000, NORD DMI-db “monthly”.

Missing Data: : 1 month in Narp2000 (2000/1), 4 months in Observed (1970/12, 1993/12, 1994/1, 2000/1). All filled using average values from stations 06080, 06081 and 25348, except for 1970/12 which was filled using 06081 only.

#### Element 401

**NARP2000:** 1890 – 1987. No series number (NACD) + DMI-db “monthly” 1991 – 2000, St. No ?

**Observed:** 1873-1987, NORD DMI-db “monthly”

**Corrected:** 1875-1987, NORD DMI-db “monthly”.

Missing Data: 0 months in Narp2000, 5 months in Observed (1942/6+7+8+9, 1952/11). The 1942 values filled using station 25100, the 1952/11 by using 25150. In both cases these were the only cases with values in the region (stations 25100, 25090, 25148, 25150, 25270, 25320 and 25340 were tried).

Suggestion: Use 06080 and 6081 (+6096) average to extend the series to include 1987-2000.

#### Element 601

**NARP2000:** 1890 – 2000. PF Serie 122 (NACD) 1890 – 1990 + 25140 NORD, DMI-db “monthly” 1991 – 2000

**Observed:** 1873-2000, NORD DMI-db “monthly”

**Corrected:** 1875-2000, NORD DMI-db “monthly”.

Missing Data: 0 months in Narp2000, 1 month in Observed (1993/12). 1993/12 was filled using the average from 4 nearby manual stations 25135, 25145, 25171 and 25172.

#### Element 602

**NARP2000:** 1890 – 2000. PF Serie 123 (REWARD) 1890 – 1995 + 25140 NORD, DMI-db “monthly” 1996 – 2000

**Observed:** 1873-2000, NORD DMI-db “monthly”

**Corrected:** 1875-2000, NORD DMI-db “monthly”.

Missing Data: 0 months in Narp2000, 1 month in Observed (1993/12). 1993/12 was filled using the average from 3 nearby manual stations 25135, 25171 and 25172.

**Element 701**

**NARP2000:** 1956 – 2000, PF Serie 125 (NACD) 1956 – 1990 + 25140 NORD, DMI-db “monthly” 1991 – 2000.

**Observed:** 1956-2000, NORD DMI-db “monthly”

**Corrected:** 1956-2000, NORD DMI-db “monthly”.

Missing Data: 2 months in Narp2000 (1993/12, 1994/1), 83 months in Observed (1993/12). June, Juli, August and Spt. Had missing values 1970-1990. After these was filled with zeros, 3 months were left (1970/12, 1993/12 and 1994/1). The first was filled using an average of 6080, 6081 and 6089, and the latter two by values from 6080 alone.

**Element 801**

**NARP2000:** 1890 – 1999. PF Serie 126 (NACD) 1890 – 1990 + 25140 NORD, DMI-db “monthly” 1991 – 2000.

**Observed:** 1873-1999, NORD DMI-db “monthly”

**Corrected:** 1875-2000, NORD DMI-db “monthly”.

Missing Data: : 3 months in Narp2000 1959/10, 1993/12, 1994/1), same 3 months in Observed. 1959/10 was filled using 6081 value, 1993/12 by an average of 6080, 6104 and 6110 (6080 had only 19 number of elements), and 1994/1 by using a value from 6080.

#### 4. Tranebjerg (TRAN) – 27080

The station Tranebjerg started in 1872 (Brandt 1994: DMI-TR94-15) and it's still running. It has always had number 27080.

##### Element 101

**NARP2000:** 1890 – 2000. PF Serie 129 (NACD) 1890 – 1990 + 27080 TRAN, DMI-db “monthly” 1991 – 2000

**Observed:** 1873-2000, TRAN DMI-db “monthly”.

**Corrected:** 1875-2000, TRAN DMI-db “monthly”.

Missing Data : 2 months in Narp2000 (1968/4, 1972/10), 4 months in Observed (1972/10+11, 1995/2, 2000/2). All filled using values from 06159, the closest station outside Samsø. No other possibilities.

##### Element 111

**NARP2000:** 1890 – 2000. PF Serie 130 (REWARD) 1890 – 1995 + 27080 TRAN, DMI-db “monthly” 1996 – 2000

**Observed:** 1874-2000, TRAN DMI-db “monthly”

**Corrected:** 1875-2000, TRAN DMI-db “monthly”.

Missing Data : 0 months in Narp2000, 7 months in Observed (1925/10, 1947/11, 1949/3, 1972/10+11, 1995/2, 2000/2). The first 3 months (1925/10, 1947/11, 1949/3) could not be filled. No other digitized values from nearby stations. The last 4 months (1972/10+11, 1995/2 and 2000/2) were filled using 06159.

##### Element 112

**NARP2000:** 1890 – 2000. PF Serie 131 (REWARD) 1890 – 1995 + 27080 TRAN, DMI-db “monthly” 1996 – 2000

**Observed:** 1874-2000, TRAN DMI-db “monthly”

**Corrected:** 1875-2000, TRAN DMI-db “monthly”.

Missing Data : 0 months in Narp2000, 7 months in Observed (1925/10, 1947/11, 1949/3, 1972/10+11, 1995/2, 2000/2). The first 3 months (1925/10, 1947/11, 1949/3) could not be filled. No other digitized values from nearby stations. The last 4 months (1972/10+11, 1995/2 and 2000/2) were filled using 06159.

##### Element 121

**NARP2000:** 1890 – 2000. PF Serie 132 (REWARD) 1890 – 1995 + 27080 TRAN, DMI-db “monthly” 1996 – 2000

**Observed:** 1874-2000, TRAN DMI-db “monthly”

**Corrected:** 1875-2000, TRAN DMI-db “monthly”.

Missing Data: 0 months in Narp2000, 6 months in Observed (1947/11, 1949/3, 1972/10+11, 1995/2, 2000/2). The first 2 months (1947/11, 1949/3) could not be filled. No other digitized values from nearby stations. The last 4 months (1972/10+11, 1995/2 and 2000/2) were filled using 06159.

##### Element 122

**NARP2000:** 1890 – 2000. PF Serie 133 (REWARD) 1890 – 1995 + 27080 TRAN, DMI-db “monthly” 1996 – 2000

**Observed:** 1873-2000, TRAN DMI-db “monthly”

**Corrected:** 1875-2000, TRAN DMI-db “monthly”.

Missing Data: 0 months in Narp2000, 6 months in Observed (1947/11, 1949/3, 1972/10+11, 1995/2, 2000/2). The first 2 months (1947/11, 1949/3) could not be filled. No other digitized values from nearby stations. The last 4 months (1972/10+11, 1995/2 and 2000/2) were filled using 06159.

##### Element 401

**NARP2000:** NA

**Observed:** 1873-1987, TRAN DMI-db “monthly”

**Corrected:** 1875-2000, TRAN DMI-db “monthly”.

Missing Data: Not Available in Narp2000, 12 months in Observed (1911/5+6+7+8, 1924/8, 1925/1, 1945/11, 1946/9, 1947/11, 1949/3, 1972/10+11). The last 2 months (1972/10+11) were filled using 06159, while the others were filled using 28180, the closest station with digitized values. For the period 1987-2000, values from 06159 was inserted to extend the serie.

##### Element 601

**NARP2000:** 1890 – 2000. PF Serie 134 (NACD) 1890 – 1990 + 27080 TRAN, DMI-db “monthly” 1991 – 2000

**Observed:** 1873-2000, TRAN DMI-db “monthly”

**Corrected:** 1875-2000, TRAN DMI-db “monthly”.

Missing Data: 4 months in Narp2000 (1957/9+10, 1972/10, 1995/2), 3 months in Observed (1972/10+11, 1995/2). These was filled using average values from stations 27070 and 27090, both located close by on Samsø.



**Element 602**

**NARP2000:** 1890 – 2000. PF Serie 135 (REWARD) 1890 – 1995 + 27080 TRAN, DMI-db “monthly” 1996 – 2000

**Observed:** 1873-2000, TRAN DMI-db “monthly”

**Corrected:** 1875-2000, TRAN DMI-db “monthly”.

Missing Data: 0 months in Narp2000, 3 months in Observed (1972/10+11, 1995/2). These was filled using average values from stations 27070 and 27090, both located close by on Samsø.

**Element 701**

**NARP2000:** 1948 – 2000. PF Serie 137 (NACD) 1948 – 1990 + 27080 TRAN, DMI-db “monthly” 1991 – 2000.

**Observed:** 1956-2000, TRAN DMI-db “monthly”

**Corrected:** 1956-2000, TRAN DMI-db “monthly”.

Missing Data: 0 months in Narp2000, 87 months in Observed (not listed). Zeros were filled into June, July, Aug. and Sept. 1970-1990. Hereafter only 7 months were missing (1949/3, 1955/1, 1955/2, 1970/12, 1972/10+11, 1995/2). The last 4 of these were filled using values from 06159, and the first 3 using values from 28180.

**Element 801**

**NARP2000:** 1890 – 1999. PF Serie 138 (NACD) 1890 – 1990 + 27080 TRAN, DMI-db “monthly” 1991 – 1999.

**Observed:** 1873-1999, TRAN DMI-db “monthly”

**Corrected:** 1875-2000, TRAN DMI-db “monthly”.

Missing Data : 8 months in Narp2000 (1947/4+11, 1948/1+11, 1949/3, 1972/10+11, 1995/2), 9 months in Observed (1947/4+11, 1948/1+11, 1949/3, 1961/9, 1972/10+11, 1995/2). The last 4 of these were filled using values from 06159, and the first 5 using values from 28180.

## 5. København (KOEB)- 06186

The station København started in 1860 (the first station in Denmark) (Brandt 1994: DMI-TR94-15) It was originally numbered 30380, and got synoptic status in 1964.

### Element 101

**NARP2000:** 1890 – 2000. PF Serie 147 (NACD) 1890 – 1990 + 30380 KOEB, DMI-db “monthly” 1991 – 2000

**Observed:** 1873-2000, KOEB DMI-db “monthly”.

**Corrected:** 1875-2000, KOEB DMI-db “monthly”.

Missing Data : 0 months in Narp2000, 0 months in Observed.

### Element 111

**NARP2000:** 1890 – 2000. PF Serie 148 (REWARD) 1890 – 1995 + 30380 KOEB, DMI-db “monthly” 1996 – 2000

**Observed:** 1874-2000, KOEB DMI-db “monthly”

**Corrected:** 1875-2000, KOEB DMI-db “monthly”.

Missing Data : 0 months in Narp2000, 1 month in Observed (1970/12). The 1970/12 value was filled using station 6180.

### Element 112

**NARP2000:** 1890 – 2000. PF Serie 149 (REWARD) 1890 – 1995 + 30380 KOEB, DMI-db “monthly” 1996 – 2000

**Observed:** 1874-2000, KOEB DMI-db “monthly”

**Corrected:** 1875-2000, KOEB DMI-db “monthly”.

Missing Data : 0 months in Narp2000, 1 month in Observed (1970/12). The 1970/12 value was filled using station 6180.

### Element 121

**NARP2000:** 1890 – 2000. No series no. (REWARD) 1890 – 1995 + 30380 KOEB, DMI-db “monthly” 1996 – 2000

**Observed:** 1874-2000, KOEB DMI-db “monthly”

**Corrected:** 1875-2000, KOEB DMI-db “monthly”.

Missing Data: 0 months in Narp2000, 1 month in Observed (1970/12). The 1970/12 value was filled using station 6180.

### Element 122

**NARP2000:** 1890 – 2000, No serie no. (REWARD) 1890 – 1995 + 30380 KOEB, DMI-db “monthly” 1996 – 2000

**Observed:** 1873-2000, KOEB DMI-db “monthly”

**Corrected:** 1875-2000, KOEB DMI-db “monthly”.

Missing Data: 0 months in Narp2000, 1 month in Observed (1970/12). The 1970/12 value was filled using station 6180.

### Element 401

**NARP2000:** NA

**Observed:** 1875 + 1923-1987, KOEB DMI-db “monthly”

**Corrected:** 1875 + 1923-2000, KOEB DMI-db “monthly”.

Missing Data: Not Available in Narp2000, 1 month missing in Observed (1957/10). The missing values was filled using station 6180. Also the series was extended from 1987 to 2000 using values from 6180.

### Element 601

**NARP2000:** 1890 – 2000. PF Serie 166 (NACD) 1890 – 1990 + 30380 KOEB, DMI-db “monthly” 1991 – 2000

**Observed:** 1873-1996, KOEB DMI-db “monthly”

**Corrected:** 1875-2000, KOEB DMI-db “monthly”.

Missing Data: 0 months in Narp2000, 0 months in Observed. The series was extended from 1996 by using values from 30381 (for the year 1996 overlap, average values from 30380 and 30381).

### Element 602

**NARP2000:** 1890 – 2000. PF Serie 150 (REWARD) 1890 – 1995 + 30380 KOEB, DMI-db “monthly” 1996 – 2000

**Observed:** 1873-2000, KOEB DMI-db “monthly”

**Corrected:** 1875-2000, KOEB DMI-db “monthly”.

Missing Data: 1 month in Narp2000 (1974/4), 0 months in Observed. The series was extended from 1996 by using values from 30381 (for the year 1996 overlap, average values from 30380 and 30381).

### Element 701

**NARP2000:** 1937 – 1997. PF Serie 152 (NACD) 1937 – 1990 + 30380 KOEB, DMI-db “monthly” 1991 – 1997.

**Observed:** 1937-1997, KOEB DMI-db “monthly”

**Corrected:** 1937-2000, KOEB DMI-db “monthly”.

Missing Data: 0 months in Narp2000, 81 months in Observed (not listed). Jun, Jul, Aug & Sep months 1970-1990 had missing data, zero’s were inserted. 1 month (1970/12) was missing after this. This month was filled using a values from 6180. Also the series was extended from 1997 – 2000 using 6180 values.

**Element 801**

**NARP2000:** 1890 – 1995. PF Serie 153 (NACD) 1890 – 1990 + 30380 KOEB, DMI-db “monthly” 1991 – 1995.

**Observed:** 1873-1995, KOEB DMI-db “monthly”

**Corrected:** 1875-2000, KOEB DMI-db “monthly”.

Missing Data : 1 month in Narp2000 (1937/1), 1 month in Observed (1937/1). This values was filled using 06183 (The only possibility from monthly. The series was extended from 1996-2000 using values from 06180.

## 6. TORSHAVN (TORS) - 6011

The Torshavn station started in 1953, and operates still. The station at Hoyvik 33060 is located reasonably close-by. This operated from 1921 - 1981) and was therefore using for filling holes. Both in the PF, EVL, JC and current series. Further details on station history can be found in Brandt(1994).

### Element 101

**NARP2000:** 1890 – 2000. PF Serie 147 (NACD) 1890 – 1921, 1922-1997 TR98-14, 6011 TORS, DMI-db “monthly” 1998 – 2000

**Observed:** 1953-2000, TORS DMI-db “monthly”.

**Corrected:** 1953-2000, TORS DMI-db “monthly”.

Missing Data : 0 months in Narp2000, 5 months in Observed (1957/9+10+11+12, 1973/11). The 5 holes were filled using values from 33060.

Further details: The NACD Element 101 data had extensive holes: 1925/4-10 and 1964/01 – 1965/12 and 1969/09 - 1975/12. These were filled in TR98-14 and introduced in NORDKLIM and NARP datasets. In NACD, several corrections were made by comparisons with Hoyvik 33060. Data in NARP (serie 353) and monthly are the same from 1958 - 1999, except in two cases (1973/11 & 1980/2).

### Element 111

**NARP2000:** 1873 – 2000. PF Serie 79 (REWARD) 1890 – 1995 + 6011 TORS, DMI-db “monthly” 1996 – 2000

**Observed:** 1953-2000, TORS DMI-db “monthly”

**Corrected:** 1953-2000, TORS DMI-db “monthly”.

Missing Data : 0 months in Narp2000, 5 months in Observed (1957/9+10+11+12, 1973/11). The 5 holes were filled using values from 33060.

Further details: Data in REWARD and “monthly” are the same from 1958 - 1995, except in very few cases (1969/10, 1979/06, 1981/01 & 1995/07). “Monthly” was used to update REWARD to include the period 1995-2000 in NORDKLIM/NARP. Data in EVL 1961-1990 (serie 361) are the same as in “monthly” except for 1973/11 where a value from Hoyvik was inserted.

### Element 112

**NARP2000:** 1873 – 2000. PF Serie 80 (REWARD) 1890 – 1995 + 6011 TORS, DMI-db “monthly” 1996 – 2000

**Observed:** 1953-2000, TORS DMI-db “monthly”

**Corrected:** 1953-2000, TORS DMI-db “monthly”.

Missing Data : 0 months in Narp2000, 5 months in Observed (1957/9+10+11+12, 1973/11). The 5 holes were filled using values from 33060.

Further details: Data values in REWARD and “monthly” are the same from 1964 except in two cases (1969/10 & 1979/06). The values in EVL 1961-1990 (serie 368) are the same as in monthly.

### Element 121

**NARP2000:** 1873 – 2000. PF Serie 81 (REWARD) 1890 – 1995 + 06011 TORS, DMI-db “monthly” 1996 – 2000

**Observed:** 1953-2000, TORS DMI-db “monthly”.

**Corrected:** 1953-2000, TORS DMI-db “monthly”.

Missing Data : 0 months in Narp2000, 5 months in Observed (1957/9+10+11+12, 1973/11). The 5 holes were filled using values from 33060.

Further details: Data values in REWARD and monthly are the same from 1964 except in the following cases (1967/07, 1969/08, 1972/07 & 1995/10). The values in EVL 1961-1990 (serie 375) are the same as in monthly, except 1973/11.

### Element 122

**NARP2000:** 1890 – 2000. PF Serie 82 (REWARD) 1890 – 1995 + 06011 TORS, DMI-db “monthly” 1996 – 2000

**Observed:** 1953-2000, TORS DMI-db “monthly”.

**Corrected:** 1953-2000, TORS DMI-db “monthly”.

Missing Data : 0 months in Narp2000, 5 months in Observed (1957/9+10+11+12, 1973/11). The 5 holes were filled using values from 33060.

Further details : Data values in REWARD and monthly are the same from 1964 except in the following cases (1968/07, 1969/08 & 1972/07). The values in EVL 1961-1990 (serie 496) are the same as in monthly, except 1973/11.

### Element 401

**NARP2000:** 1890 – 2000. PF Serie 83 (NACD) 1890 – 1990 + 06011 TORS, DMI-db “monthly” 1991 – 2000

**Observed:** 1953-2000, TORS DMI-db “monthly”

**Corrected:** 1953-2000, TORS DMI-db “monthly”.

Missing Data : 7 months in Narp2000 (1925/4+5+6+7+8+9+10), 5 month in Observed (1957/9+10+11+12, 1973/11). The 5 holes were filled using values from 33060.

Further details : Data values in NACD and monthly are the same from 1958 except in the following cases (1980/01 & 1981/01). The values in EVL 1961-1990 (serie 1220) are the same as in monthly, except 1973/11 and 1980/01. There are no observations on the Faroe Islands during the missing period in 1925.

#### **Element 601**

**NARP2000:** 1890 – 2000. PF Serie 84 (NACD) 1890 – 1990 + 06011 TORS, DMI-db “monthly” 1991 – 2000

**Observed:** 1953-2000, TORS DMI-db “monthly”

**Corrected:** 1953-2000, TORS DMI-db “monthly”.

Missing Data : 0 months in Narp2000, 9 month in Observed (1957/9+10+11+12, 1971/8+9+10, 1972/11 & 1973/11). All 9 months were filled using values from 33060.

Further details: Data values in NACD and monthly are the same from 1958 except in the following cases (1971/07, 1980/03, 1981/01 & 1985/03). The values in JC/EVL 1922-1997 (serie 1154) are completely different from both NACD and monthly until 1993/01. From then onwards, they are the same.

#### **Element 602**

**NARP2000:** 1890 – 2000. PF Serie 85 (NACD) 1890 – 1990 + 06011 TORS, DMI-db “monthly” 1991 – 2000

**Observed:** 1953-2000, TORS DMI-db “monthly”

**Corrected:** 1953-2000, TORS DMI-db “monthly”.

Missing Data : 0 months in Narp2000, 9 month in Observed (1957/9+10+11+12, 1971/8+9+10, 1972/11 & 1973/11). All 9 months were filled using values from 33060.

Further details: Data values in NACD and NARP are the same. NACD and monthly are the same from 1958/01 except in the following cases (1971/09 & 1985/03). The values in EVL 1960-1990 (serie 1166) are the same except the cases (1971/8+9+10, 1972/11, & 1973/11).

#### **Element 701**

**NARP2000:** 1939 – 2000. No serie no. (NACD) 1939 – 1990 + 06011 TORS, DMI-db “monthly” 1991 – 2000

**Observed:** 1953-2000, TORS DMI-db “monthly”

**Corrected:** 1953-2000, TORS DMI-db “monthly”.

Missing Data : 36 months in Narp2000 (not listed), 22 months in Observed (not listed). For all 22 missing months values from 33060 were inserted.

Further details: Data values in NACD had holes for entire years 1964, 1965 and 1970. Values from TR98-14 are different from NACD and monthly in most months in the period 1961-1990. The values in EVL 1960-1990 (serie 1224) are the same as monthly except the cases (1962/02, 1966/12, 1967/01, 1967/03, 1967/12, 1973/11 & 1982/01).

#### **Element 801**

**NARP2000:** 1890 – 2000. PF Serie 83 (NACD) 1890 – 1990 + 06011 TORS, DMI-db “monthly” 1991 – 2000

**Observed:** 1874-2000, TORS DMI-db “monthly”

**Corrected:** 1875-2000, TORS DMI-db “monthly”.

Missing Data : 0 months in Narp2000, 5 months in Observed (1957/9+10+11+12, 1973/11). All 9 months were filled using values from 33060

Further details: Comparison between the NACD and monthly was not made.

## 7. STROND KRAFTSTATION (STRO) - 33054

Strond Kraftstation, STRO, is unique compared to the others stations for two reasons. First of all it has only precipitation measurements, and secondly it was not included in NACD, REWARD and NORDKLIM, but only in the NARP dataset.

### Element 601

**NARP2000:** 1961 – 2000. 33054 STRO, DMI-db “monthly” 1961 – 2000

**Observed:** 1931-2000, STRO DMI-db “monthly”

**Corrected:** 1931-2000, STRO DMI-db “monthly”.

Missing Data: 3 months in Narp2000 (1991/5+6+11), 8 months in Observed (1933/7, 1977/3, 1982/8+9+10, 1991/5+6+11). 1933/7 was filled using the average of 33060, 33070 & 33090. 1977/3, 1982/8+9+10 using the average of the northern Faroe stations 33020, 33025 and 33035. The remaining months 1991/5+6+11 was filled using a 5-year period regression against the average of stations 33020 and 33045 ( $r^2=0.810$ ):  $St.33054 = 0.9451 * (St.33020 + St.33045)/2$ . This was an improvement compared to single station correlations made with stations 33020, 33057, 33045, 33051, 33080 and 33090, all tested. The two best correlation ( $r^2=0.781$  and  $r^2=0.797$ ) was found for St. 33020 and 33045 respectively.

Further details : The serie 1161 from TR98-14, originally had holes that were filled through correlation with 06009, 06011, 33020, 33080, 33090 (Cappelen & Laursen 1998).

### Element 602

**NARP2000:** 1961 – 2000. 33054 STRO DMI-db “monthly” 1961 – 2000

**Observed:** 1931-2000, STRO DMI-db “monthly”

**Corrected:** 1931-2000, STRO DMI-db “monthly”.

Missing Data : 7 months in Narp2000, 7 month in Observed (1925/4+5+6+7+8+9+10). No observations on the Faroe Islands during this period, so the hole could not be filled.

Details: The Element 602 (serie 1172) from TR98-14, originally had holes that were filled through correlation with 06009, 06011, 33020, 33080, 33090 (Cappelen & Laursen 1998). In the NARP/monthly\_clima dataset some 3 holes in 1991 as in element 601 was found. The same correlation was used to calculate the missing daily values and therefrom the missing monthly values. (Inserted values: 05/1991=172 06/1991=302 11/1991 = 591).

## 8. UPERNAVIK (UPER) - 4210

The station in Upernavik has had several numbers including 34210, 4210, 4209 and 4211 for different periods and was in fact also moved geographically in 2000 (and renamed from 4210 to 4211).

### Element 101

**NARP2000:** 1873 – 2000. PF Serie 2 (Not = NACD) 1873- 1997, 4210 UPER, DMI-db “monthly” 1998 – 2000

**Observed:** 1958-2000, UPER DMI-db “monthly”.

**Corrected:** 1958-2000, UPER DMI-db “monthly”.

Missing Data : 0 months in Narp2000, 0 months in Observed.

Details: note that this Poul Frich serie is rather new and not identical to the NACD serie (only 1890-1981). NACD had many holes (1891/10, 1934/4, 1932/8+9, 1939/8+9+10+11, 1940/2, 1943/9, 1944/4 – 1945/10, 1981/7-12). The JC serie 1425, 1958 – 1999 (herefrom 1961 - 1990 published in TR00-18) is basically an extension of the NACD series to 1999. They are equal from 1958 - 1981 except in a few cases (1968/10, 1970/5, 1971/12, 1977/8, 1979/1 and 1981/3), where JC corrects small NACD mistakes by comparisons with "monthly" . After the restart of 4210 instead of 4209 in 1995/09 the data in PF, JC, NACD and *monthly* are exactly the same. The JC series has "introduced" holes in for example in 1977/08 due to a very low number of elements used for the monthly calculations. Other holes: 1981/07-1984/08, 1986/02-10, 1988/09 - 1989/01, 1990/10+11 & 1991/08.

### Element 111

**NARP2000:** 1890 – 2000. No serie no. (REWARD) 1890 – 1995 + 4210 UPER, DMI-db “monthly” 1996 – 2000

**Observed:** 1953-2000, UPER DMI-db “monthly”.

**Corrected:** 1875-2000, UPER DMI-db “monthly”.

Missing Data : 24 months in Narp2000 (not listed), 0 months in Observed.

Details: no info about PF series number. JC serie (Serie 1451: 1958/01 - 1999/12) and REWARD/NARP are equal for long periods 1961/01 - 1981/06 (except in a few cases: 1966/12, 1967/05, 1968/10, 1970/05, 1971/02, 1971/12, 1977/08 and 1981/03). The JC-serie 1451 has missing values from 1981/07 - 1995/09. Oct.1995/10 the values are again the same except in some few cases (1995/11, 1997/09 and 1997/12). Before 1961/01 (e.g. 1958/01 - 1960/12) values are different). REWARD holes : 1914/01 - 12, 1925/03 - 1927/07, 1943/04 - 1945/10. The data in monthly are the same as in JC from 1958 - 1961. From 1961 - 1981 monthly/JC/NARP are equal except in a few cases (typing errors ?). Also the data in monthly are the same as NARP and JC from 1995 - 2000. In the period with 4209 the number of elements were often low (15-25 pr. month), which caused JC to insert "missing values". In the 4209 period the REWARD series is often equal to monthly for 4209, but many months are different. Corrected ?

### Element 112

**NARP2000:** 1890 – 2000. PF Serie 4 (REWARD) 1890 – 1995 + 4210 UPER, DMI-db “monthly” 1996 – 2000

Details: the PF (Serie 4) consist of st34210 from 1890 - 1954, st4210 from 1955 - 1986, st4209 from 1987 - 1995/09 and st4210 from 1995/10 - 12. The PF data and the JC (Serie 1474: 1958/01 – 1999/12) are the same during most of the period (1958-1996). The main difference is introduced holes in the JC serie due to low number of elements in some periods. These holes are 1958/05 - 07, 1977/07 and 1981/07 - 1995/09. A part from these values are different in 1968/10, 1970/05, 1971/12 and 1981/03. As with elem.111, the REWARD/NARP serie has holes 1914/01 - 12, 1925/03 - 1927/07, 1943/04 - 1945/10. The data in montly (starting 1958/01) are the same as NARP, except in a few cases (1968/10, 1970/05, 1971/12, 1981/03, 1983/06, 1987/01 and 1995/09). Station 4210 used for most of period, except 4209 is used from 1987/03 - 1995/09.

### Element 121

**NARP2000:** 1890 – 2000. PF Serie 5 (REWARD) 1890 – 1995 + 4210 UPER, DMI-db “monthly” 1996 – 2000

Details: the PF data consists of st34210 from 1890/01 - 1960/12, st4210 from 1961/01 – 1985/12, st4209 from 1986/01 - 1995/10 and st4210 1995/10 - 1995/12. The PF and JC data (Serie 1495: 1958/01 – 1999/12) are the same during most of the period (1958-1996). The main difference is introduced holes in the JC serie due to low number of elements in some periods. These are primarily 1977/08 and the period 1981/07 - 1995/09. Different values are found in 1958/01 -1961/01, 1976/02 and 1981/06. The NARP/REWARD serie is the same as PF, except for the three months (1932/08+09 and 1950/07). Two large holes are found 1925/01 - 1927/07 and 1944/04 - 1946/02. The data in monthly are the same as NARP from 1961/02 - 1981/09 and again from 1995/10 except in a few cases (1976/02, 1978/08 and 1998/01+02). Before 1961/02 they are equal to JC serie. There is one hole from 1982/01-08. From 1987-1995 the data in NARP are from monthly for 4209.

### Element 122

**NARP2000:** 1890 – 2000. PF Serie 6 (REWARD) 1890 – 1995 + 4210 UPER, DMI-db “monthly” 1996 – 2000

Details: The JC (Serie 1516: 1958/01 – 1999/12) and PF data are the same from 1960/12 - 1981/06 and 1995/10-12, except for a few months (1973/03, 1973/05 & 1977/08). Before 1960/12 (1958/01 – 1960/11) they are different, with JC values the same

as in monthly. The JC data has holes: one major hole: 1981/07 - 1995/09, a minor holes: 1973/05, 1977/08, 1998/01 & 1999/05. The NARP/REWARD serie is the same as the PF serie except for 1932/09, 1989/11 & 1993/11. The REWARD series has holes from 1925/01 - 1927/07 and 1944/04 - 1946/02.

#### **Element 401**

**NARP2000:** 1890 – 2000. PF Serie 7 (NACD, until 1981) 1890 – 1995 + 4210 UPER, DMI-db “monthly” 1996 – 2000

Details: The JC (Serie 1606: 1958/01 – 1999/12) and PF data are the same for most of the overlapping period, except 1981/03+08+12, 1991/02+04+05, 1992/09, 1994/07+12, 1995/02+05-09. But the JC data actually has more values than the PF serie !, including 1984/09 – 1985/12, 1986/11 – 1988/08, 1989/02 - 1990/12. The PF and NACD are identical in the overlapping period (until 1981/12). The NACD has extensive holes: 1891/10, 1899/08, 1900/08, 1927/01 -07, 1931/04, 1932/08+09, 1939/08-11, 1940/02 - 1945/12, 1949/01-06, 1981/07, 1982/01 – 1984/08, 1986/01-10, 1988/09 – 1989/01.

#### **Element 601**

**NARP2000:** 1890 – 1986. PF Serie 8 (NACD, until 1949) 1890 – 1986

Details : Data in PF and JC (Serie 1909: 1958/06 - 1981/05) series are the same in the overlap period except only 1963/11 and 1977/08 (JC no data). The same data are found in NARP and NACD. NACD has big holes with missing data before 1950: 1891/09, 1908/02, 1923/08, 1927/02+03, 1931/04, 1932/08+09, 1933/01+03, 1934/07, 1936/01, 1937/08, 1937/12 – 1938/05, 1938/10-12, 1939/02-04+08-12, 1940/02+03+05+11, 1941/02+03, 1941/11 – 1942/05, 1942/10 – 1943/05, 1943/10, 1943/12 – 1946/06, 1946/11 – 1947/05, 1947/08, 1947/10 – 1948/05, 1948/10 – 1949/06, 1949/10-1950/05, 1950/10+12. Station 4209 did not measure precipitation.

#### **Element 602**

**NARP2000:** 1949 – 1986. PF Serie 10 (NACD, until 1949) 1890 – 1986

Details: the JC (Serie 1930: 1958/01 - 1981/12), PF, NARP, REWARD data are exactly the same except JC has introduced holes due to low number of elements for certain months/periods. Data in "monthly" are also the same (starting in January 1958). No information about stations or adjustments. Remark: Station 4209 did not measure precipitation.

#### **Element 701**

**NARP2000:** 1938 – 1981. PF Serie 12 (NACD, until 1949) 1938 – 1981

Details: the JC((Serie 2030: 1958/01 - 1981/05), PF, NARP and NACD data are exactly the same in the overlap period, except JC does not include the second half of 1981 due to low number of elements. Data in "monthly" are also the same (starting in January 1958).

#### **Element 801**

**NARP2000:** 1890 – 1981. PF Serie 13 (NACD, until 1949) 1890 – 1981

Details: the PF, NARP and NACD data are exactly the same. The JC (Serie 2087: 1958/01 - 1981/06) data is also the same for the overlap period, except in the following months (1959/07, 1959/08, 1961/07+12, 1962/06, 1963/01, 1964/03+05+08+09+12, 1965/05, 1969/11, 1972/02, 1975/06, 1977/08+12, 1979/01+04). The data in monthly are the same as in the JC series except for 1977/08.



## 9 ILLULISAAT (ILUL) - 4221

The station started as 34216 in Jacobshavn City. It was upgraded in 1961 to synoptic status 4216. In 1984 the present station 4221 at the airport was started. The old station 4216 ran in parallel until 1992. (Some info suggest the 4216 may already have started in 1956).

### Element 101

**NARP2000:** 1873 – 2000. PF Serie 14 (NACD) 1890-1990 + 4221 ILUL, DMI-db “monthly” 1991 – 2000.

**Details:** The PF and JC (serie 1426: 1961/01 – 1979/03) data are similar, but they are not identical. 50 % of the months are identical, 40 % have differences of +/- 0.1 °C and the rest have larger differences. The NARP/PF series is not the same as the NACD, but rather a corrected version of it, with corrections on a monthly basis for different periods. NARP has no holes, while NACD had several missing months including (1916/10-12, 1917/02, 1921/03, 1929/07, 1936/10 & 1937/07). From 1982 - 1990 NARP and NACD are the same. Monthly for 4216 is almost the same as NACD but 54 of 396 months have slightly different values.

### Element 111

**NARP2000:** 1894 – 2000. To be continued.

**Observed:** To be continued.

**Corrected:** To be continued.

**Details:**

### Element 112

**NARP2000:** 1890 – 2000. To be continued.

**Observed:** To be continued.

**Corrected:** To be continued.

**Details:**

### Element 121

**NARP2000:** 1890 – 2000. To be continued.

**Observed:** To be continued.

**Corrected:** To be continued.

**Details:**

### Element 122

**NARP2000:** 1890 – 2000. To be continued.

**Observed:** To be continued.

**Corrected:** To be continued.

**Details:**

### Element 401

**NARP2000:** 1890 – 2000. To be continued.

**Observed:** To be continued.

**Corrected:** To be continued.

**Details:**

### Element 601

**NARP2000:** 1890 – 1990. To be continued.

**Observed:** To be continued.

**Corrected:** To be continued.

**Details:**

### Element 602

**NARP2000:** 1890 – 1991. To be continued.

**Observed:** To be continued.

**Corrected:** To be continued.

**Details:**

### Element 701

**NARP2000:** 1938 – 1981. To be continued.

### Element 801

**NARP2000:** 1890 – 1986. To be continued.

**Observed:** To be continued.

**Corrected:** To be continued.

**Details:**

## 10 Nuuk (NUUK) - 4250

The station started as 34250 in Nuuk.

### **Element 101**

**NARP2000:** 1890 – 2000. To be continued

**Observed:** To be continued.

**Corrected:** To be continued.

Details:

### **Element 111**

**NARP2000:** 1890 – 2000. To be continued.

**Observed:** To be continued.

**Corrected:** To be continued.

Details:

### **Element 112**

**NARP2000:** 1890 – 2000. To be continued.

**Observed:** To be continued.

**Corrected:** To be continued.

Details:

### **Element 121**

**NARP2000:** 1890 – 2000. To be continued.

**Observed:** To be continued.

**Corrected:** To be continued.

Details:

### **Element 122**

**NARP2000:** 1890 – 2000. To be continued.

**Observed:** To be continued.

**Corrected:** To be continued.

Details:

### **Element 401**

**NARP2000:** 1890 – 2000. To be continued.

**Observed:** To be continued.

**Corrected:** To be continued.

Details:

### **Element 601**

**NARP2000:** 1890 – 2000. To be continued.

**Observed:** To be continued.

**Corrected:** To be continued.

Details:

### **Element 602**

**NARP2000:** 1921 – 2000. To be continued.

**Observed:** To be continued.

**Corrected:** To be continued.

Details:

### **Element 701**

**NARP2000:** 1942 – 1998. To be continued.

**Observed:** To be continued.

**Corrected:** To be continued.

Details:

### **Element 801**

**NARP2000:** 1890 – 2000. To be continued.

**Observed:** To be continued.

**Corrected:** To be continued.

Details:

## 11 Narsarsuaq (NARS) - 4270

The station started as 34250 in Nuuk.

### Element 101

**NARP2000:** 1873 – 2000.

**Observed:** To be continued.

**Corrected:** To be continued.

Details:

### Element 111

**NARP2000:** 1890 – 2000. To be continued.

**Observed:** To be continued.

**Corrected:** To be continued.

Details:

### Element 112

**NARP2000:** 1890 – 2000. To be continued.

**Observed:** To be continued.

**Corrected:** To be continued.

Details:

### Element 121

**NARP2000:** 1890 – 2000. To be continued.

**Observed:** To be continued.

**Corrected:** To be continued.

Details:

### Element 122

**NARP2000:** 1890 – 2000. To be continued.

**Observed:** To be continued.

**Corrected:** To be continued.

Details:

### Element 401

**NARP2000:** 1890 – 2000. To be continued.

**Observed:** To be continued.

**Corrected:** To be continued.

Details:

### Element 601

**NARP2000:** 1890 – 2000. To be continued.

**Observed:** To be continued.

**Corrected:** To be continued.

Details:

### Element 602

**NARP2000:** 1890 – 2000. To be continued.

**Observed:** To be continued.

**Corrected:** To be continued.

Details:

### Element 701

**NARP2000:** 1938 – 1999. To be continued.

**Observed:** To be continued.

**Corrected:** To be continued.

Details:

### Element 801

**NARP2000:** 1890 – 2000. To be continued.

**Observed:** To be continued.

**Corrected:** To be continued.

Details:

## 12 Danmarkshavn (DANM) - 4320

The station started in 1949.

### **Element 101**

**NARP2000:** 1949 – 2000.

**Observed:** To be continued.

**Corrected:** To be continued.

Details:

### **Element 111**

**NARP2000:** 1949 – 2000. To be continued.

**Observed:** To be continued.

**Corrected:** To be continued.

Details:

### **Element 112**

**NARP2000:** 1949 – 2000. To be continued.

**Observed:** To be continued.

**Corrected:** To be continued.

Details:

### **Element 121**

**NARP2000:** 1949 – 2000. To be continued.

**Observed:** To be continued.

**Corrected:** To be continued.

Details:

### **Element 122**

**NARP2000:** 1958 – 2000. To be continued.

**Observed:** To be continued.

**Corrected:** To be continued.

Details:

### **Element 401**

**NARP2000:** 1949 – 2000. To be continued.

**Observed:** To be continued.

**Corrected:** To be continued.

Details:

### **Element 601**

**NARP2000:** 1949 – 2000. To be continued.

**Observed:** To be continued.

**Corrected:** To be continued.

Details:

### **Element 602**

**NARP2000:** 1949 – 2000. To be continued.

**Observed:** To be continued.

**Corrected:** To be continued.

Details:

### **Element 701**

**NARP2000:** 1957 – 2000. To be continued.

**Observed:** To be continued.

**Corrected:** To be continued.

Details:

### **Element 801**

**NARP2000:** 1949 – 2000. To be continued.

**Observed:** To be continued.

**Corrected:** To be continued.

Details:

## 13 Ittoqqortoormiit (ITTO) - 4339

The station started in 1924.

### **Element 101**

**NARP2000:** 1924 – 2000.

**Observed:** To be continued.

**Corrected:** To be continued.

Details:

### **Element 111**

**NARP2000:** 1924 – 2000. To be continued.

**Observed:** To be continued.

**Corrected:** To be continued.

Details:

### **Element 112**

**NARP2000:** 1924 – 2000. To be continued.

**Observed:** To be continued.

**Corrected:** To be continued.

Details:

### **Element 121**

**NARP2000:** 1949 – 2000. To be continued.

**Observed:** To be continued.

**Corrected:** To be continued.

Details:

### **Element 122**

**NARP2000:** 1958 – 2000. To be continued.

**Observed:** To be continued.

**Corrected:** To be continued.

Details:

### **Element 401**

**NARP2000:** 1923 – 2000. To be continued.

**Observed:** To be continued.

**Corrected:** To be continued.

Details:

### **Element 601**

**NARP2000:** 1949 – 2000. To be continued.

**Observed:** To be continued.

**Corrected:** To be continued.

Details:

### **Element 602**

**NARP2000:** 1949 – 2000. To be continued.

**Observed:** To be continued.

**Corrected:** To be continued.

Details:

### **Element 701**

**NARP2000:** 1993 – 2000. To be continued.

**Observed:** To be continued.

**Corrected:** To be continued.

Details:

### **Element 801**

**NARP2000:** 1923 – 2000. To be continued.

**Observed:** To be continued.

**Corrected:** To be continued.

Details:

## 14 Tasiliaq (TASI) - 4360

The station started as 34360 in Tasiliaq.

### Element 101

**NARP2000:** 1894 – 2000.

**Observed:** To be continued.

**Corrected:** To be continued.

Details:

### Element 111

**NARP2000:** 1897 – 2000. To be continued.

**Observed:** To be continued.

**Corrected:** To be continued.

Details:

### Element 112

**NARP2000:** 1894 – 2000. To be continued.

**Observed:** To be continued.

**Corrected:** To be continued.

Details:

### Element 121

**NARP2000:** 1894 – 2000. To be continued.

**Observed:** To be continued.

**Corrected:** To be continued.

Details:

### Element 122

**NARP2000:** 1958 – 2000. To be continued.

**Observed:** To be continued.

**Corrected:** To be continued.

Details:

### Element 401

**NARP2000:** 1894 – 2000. To be continued.

**Observed:** To be continued.

**Corrected:** To be continued.

Details:

### Element 601

**NARP2000:** 1897 – 2000. To be continued.

**Observed:** To be continued.

**Corrected:** To be continued.

Details:

### Element 602

**NARP2000:** 1897 – 2000. To be continued.

**Observed:** To be continued.

**Corrected:** To be continued.

Details:

### Element 701

**NARP2000:** 1958 – 2000. To be continued.

**Observed:** To be continued.

**Corrected:** To be continued.

Details:

### Element 801

**NARP2000:** 1894 – 2000. To be continued.

**Observed:** To be continued.

**Corrected:** To be continued.

Details:

## 4. Data description

The data are located in three directories: *Narp2000*, *Observed*, *Corrected* respectively.

Separate fixed-format ASCII-files are provided for each station, for each element, named by the 4-letter station abbreviation and element no. (ex. Nars601.dat contains Precipitation for Narssarsuaq, Element No. 601).

A total of 337 data-files in this preliminary version of the report.

**Version 1 of the current document is expected to be released ultimo June 2002.**

The fixed ASCII-format is:

Variable	Rec	Start	End	Format
YEAR	1	1	6	F6.0
JAN	1	7	14	F8.0
FEB	1	15	22	F8.0
MAR	1	23	30	F8.0
APR	1	31	38	F8.0
MAY	1	39	46	F8.0
JUN	1	47	54	F8.0
JUL	1	55	62	F8.0
AUG	1	63	70	F8.0
SEP	1	71	78	F8.0
OCT	1	79	86	F8.0
NOV	1	87	94	F8.0
DEC	1	95	102	F8.0

## 5. References

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## 6. APPENDIX

(Will be homogenized in version 1.0)

### UPERNAVIK: REGRESSION TO FILL HOLES FOR ELEMENT 401

For 1890 - 1960 Correlation with 4216/4221

For 1961 - 1999 Correlation with 4200/4202 and 4216/4221

1961 - 1999 Element 401 :  $\langle \text{St4210} \rangle = X1 * \text{THULE} + X2 * \text{JACOBHAVN} + Y$

	X1	X2	Y	R2
Jan	0.606	0.384	101.6	0.991
Feb	0.631	0.377	-88.7	0.984
Mar	0.372	0.596	336.3	0.989
Apr	0.434	0.604	-388.4	0.946
May	0.463	0.535	28.3	0.962
Jun	0.365	0.652	-169.6	0.965
Jul	0.408	0.545	471.5	0.968
Aug	0.283	0.703	141.4	0.921
Sep	0.630	0.370	-4368.0	0.973
Oct	0.505	0.527	-317.2	0.959
Nov	0.579	0.387	331.8	0.985
Dec	0.633	0.414	-472.4	0.981

1890 - 1960 Element 401 :  $\langle \text{St4210} \rangle = X * \text{JACOBHAVN} + Y$

	X	Y	R2
Jan	0.923	793.6	0.956
Feb	0.924	791.5	0.954
Mar	0.881	1228.1	0.898
Apr	0.891	1123.5	0.893
May	0.897	1060.8	0.863
Jun	0.962	393.0	0.893
Jul	0.909	922.8	0.910
Aug	0.918	836.2	0.870
Sep	0.887	1146.2	0.849
Oct	0.884	1180.6	0.885
Nov	0.884	1178.7	0.899
Dec	0.961	416.7	0.899

#### Upernavik station numbering

34210 Jan. 1973 - Dec. 1949  
 4210 Jan. 1950 - Dec. 1986  
 4209 Sep.1984 - Sep.1995  
 4210 Sep.1995 - Sep.2000  
 4211 Sep.2000 - present

#### Station-positions

34210 01.09.1873 - 31.12.1960 (Lat. 72 47 00, Long. -56 10 00)  
 4210 01.01.1958 - 31.01.1987 (Lat. 72 47 00, Long. -56 10 00)  
 4209 30.08.1984 - 26.09.1995 (Lat. 72 47 00, Long. -56 10 00)  
 4210 08.09.1995 - present (Lat. 72 47 00, Long. -56 10 00)  
 4211 23.10.2000 - present (Lat. 72 47 00, Long. -56 08 00)

## INTERPOLATION OF GREENLAND TIMESERIES

### ELEMENT101

#### DANMARKSHAVN (04320)

Missing values 1977/08, 1981/07, 1981/08, 1981/09, 1981/10

Unfortunately, Station Itto (4339) og Station Daneborg (4330) are missing the same months so regression can only be made with station NORD (4310/4312). (Best regression was station Nord, all possible combinations was tested, i.e. ILUL, NARS, NUUK, TASI, UPER).

(Regressions are made using the same month +/- 1 month).

DANM 1977-08	= 0.622 * NORD + 13.4	= 23	(R2=0.936)
DANM 1981-07	= 0.542 * NORD + 14.1	= 33	(R2=0.570)
DANM 1981-08	= 0.622 * NORD + 13.4	= 43	(R2=0.936)
DANM 1981-09	= 0.492 * NORD + 0.8	= -41	(R2=0.559)
DANM 1981-10	= 0.696 * NORD - 3.3	= -113	(R2=0.467)

#### ITTOQQORTOOMIIT (04339)

Missing values 1977/08, 1981/07, 1981/08, 1981/09, 1981/10

Station Daneborg (4330) is unfortunately missing for the periodes, while Aputteeq(4350/4351) exists for most, only 1977/08 was made using Station Danmarkshavn alone.

ITTO 1977-08	= 0.496 * DANM + 22.8	= 34	(R2=0.673)
ITTO 1981-07	= 0.551 * APUTT + 0.533 * DANM + 6.4	= 37	(R2=0.468)
ITTO 1981-08	= 0.382 * APUTT + 0.407 * DANM + 15.9	= 44	(R2=0.694)
ITTO 1981-09	= 0.745 * APUTT + 0.395 * DANM + 11.6	= 9	(R2=0.934)
ITTO 1981-10	= 0.731 * APUTT + 0.428 * DANM + 15.4	= -58	(R2=0.953)

#### NARSARSUAQ (04270)

No missing values

#### NUUK (4250)

Missing values 2000/04

The station was correlated with ILUL(4221) og NARS(4270).

NUUK 2000-04	= 0.424 * ILUL + 0.320 * NARS + 5.4	= -84	(R2=0.929)
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#### TASILLIAQ(4360)

No missing values,

#### ILULISSAT(4216/4221)

Missing values 1976/07, 1993/05, 1993/06, 2000/04

The station was correlated with Aasiaat(4220).

ILUL 1976-07	= 0.948 * AASI + 23.7	= (R2=0.829)
ILUL 1993-05	= 1.081 * AASI + 21.0	= (R2=0.987)
ILUL 1993-06	= 1.080 * AASI + 20.0	= (R2=0.968)
ILUL 2000-04	= 1.063 * AASI + 19.2	= (R2=0.989)

#### UPERNAVIK(4209/4210)

Missing values 1977/08, 1982/01-12, 1983/01-07, 1983/09-11, 1984/01+02+04+05+06+07, 1986/02-10, 1988/09+10+11+12, 1989/01, 1990/10+11, 1991/08

The station is for all months except one (1982/03) correlated with both Ilulissat and Pittufik

UPER Januar	= 0.607 * ILUL + 0.542 * PITTU + 32.3	= (R2=0.867)
UPER Februar	= 0.480 * ILUL + 0.575 * PITTU + 12.6	= (R2=0.902)
UPER Marts	= 0.386 * ILUL + 0.600 * PITTU - 0.2	= (R2=0.954)
UPER April	= 0.432 * ILUL + 0.524 * PITTU - 11.2	= (R2=0.979)
UPER Maj	= 0.520 * ILUL + 0.437 * PITTU - 16.6	= (R2=0.982)
UPER Juni	= 0.647 * ILUL + 0.384 * PITTU - 19.9	= (R2=0.966)
UPER Juli	= 0.748 * ILUL + 0.407 * PITTU - 24.2	= (R2=0.842)

UPER August	= 0.574 * ILUL + 0.249 * PITTU - 2.2	= (R2=0.897)
UPER September	= 0.513 * ILUL + 0.283 * PITTU - 2.5	= (R2=0.968)
UPER Oktober	= 0.431 * ILUL + 0.351 * PITTU + 5.6	= (R2=0.963)
UPER November	= 0.599 * ILUL + 0.412 * PITTU + 20.9	= (R2=0.917)
UPER December	= 0.513 * ILUL + 0.283 * PITTU + 2.5	= (R2=0.889)

1982/03 is correlated with ILUL alone since PITTU is missing for this month

$$\text{UPER 1982/03} = 0.843 * \text{ILUL} - 70.3 = -204 \quad = (R2=0.876)$$

1977/08 = 49, 1982/01 = -129, 1982/02 = -219, 1982/04 = -125, 1982/05 = -45, 1982/06 = 31, 1982/07 = 65, 1982/08 = 40, 1982/09 = -9, 1982/10 = -57, 1982/11 = -119, 1982/12 = -183, 1983/01 = -334, 1983/02 = -270, 1983/03 = -252, 1983/04 = -149, 1983/05 = -55, 1983/06 = 25, 1983/07 = 81, 1983/09 = 11, 1983/10 = -57, 1983/11 = -116, 1984/01 = -278, 1984/02 = -333, 1984/04 = -164, 1984/05 = -64, 1984/06 = 16, 1984/07 = 71, 1986/02 = -105, 1986/03 = -217, 1986/04 = -124, 1986/05 = -35, 1986/06 = 5, 1986/07 = 41, 1986/08 = 51, 1986/09 = 14, 1986/10 = -80, 1988/09 = 18, 1988/10 = -25, 1988/11 = -62, 1988/12 = -154, 1989/01 = -239, 1990/10 = -68, 1990/11 = -95, 1991/08 = 39.

## ELEMENT111

### DANMARKSHAVN (04320)

Missing values 1977/08, 1981/07, 1981/08, 1981/09, 1981/10

Station Itto (4339) and Station Daneborg (4330) are missing the same months, so regression can only be made against Station Nord (4310/4312) and Ittoqqormiit(4339/4340).

(Regressions are made using the same month +/- 1 month).

$$\text{DANM 1977-08} = 0.486 * \text{ITTO} + 0.491 * \text{NORD} + 2.0 = 54 \quad (R2=0.928)$$

$$\text{DANM 1981-07} = 0.472 * \text{ITTO} + 0.369 * \text{NORD} + 8.8 = 65 \quad (R2=0.629)$$

$$\text{DANM 1981-08} = 0.486 * \text{ITTO} + 0.491 * \text{NORD} + 2.0 = 77 \quad (R2=0.928)$$

$$\text{DANM 1981-09} = 0.240 * \text{ITTO} + 0.305 * \text{NORD} + 0.464 * \text{DANE} - 6.9 = -33 \quad (R2=0.991)$$

$$\text{DANM 1981-10} = 0.465 * \text{ITTO} + 0.547 * \text{NORD} + 4.1 = -86 \quad (R2=0.980)$$

### ITTOQQORTOOMIIT (04339/4340)

Missing values 1977/08, 1981/08

Station Daneborg (4330) is missing, so correlation was made with Station Nord alone or Station Nord + Tasiilaq, respectively.

$$\text{ITTO 1977-08} = 0.256 * \text{NORD} + 0.291 * \text{TASI} + 23.4 = 65 \quad (R2=0.650)$$

$$\text{ITTO 1981-08} = 0.348 * \text{NORD} + 47.8 = 75 \quad (R2=0.634)$$

### NARSARSUAQ (04270)

No missing values

### NUUK (4250)

No missing values

### TASIILIAQ(4360)

No missing values

### ILULISSAT(4216/4221)

Missing values 1993/05, 1993/06, 2000/04

The station was correlated with Aasiaat(4220).

$$\text{ILUL 1993-05} = 1.090 * \text{AASI} + 20.6 = \quad (R2=0.967)$$

$$\text{ILUL 1993-06} = 1.063 * \text{AASI} + 19.8 = \quad (R2=0.933)$$

$$\text{ILUL 2000-04} = 1.056 * \text{AASI} + 19.4 = \quad (R2=0.971)$$

### UPERNAVIK(4209/4210)

Missing values : 1977/08, 1982/01+02+04+05+10, 1983/02+04+05, 1984/04+06, 1988/09+10+11+12, 1989/01, 1991/08

The station was for all months correlated with both Illulissat and Pittufik

$$\text{UPER Januar} = 0.539 * \text{PITTU} + 0.573 * \text{ILUL} + 15.4 = \quad (R2=0.898)$$

$$\text{UPER Februar} = 0.587 * \text{PITTU} + 0.472 * \text{ILUL} + 6.5 = \quad (R2=0.902)$$

$$\text{UPER April} = 0.469 * \text{PITTU} + 0.501 * \text{ILUL} - 16.6 = \quad (R2=0.968)$$

$$\text{UPER Maj} = 0.401 * \text{PITTU} + 0.581 * \text{ILUL} - 21.2 = \quad (R2=0.974)$$

UPER Juni	= 0.407 * PITTU + 0.633 * ILUL - 22.9	= (R2=0.950)
UPER August	= 0.224 * PITTU + 0.678 * ILUL - 9.9	= (R2=0.893)
UPER September	= 0.277 * PITTU + 0.584 * ILUL - 2.7	= (R2=0.962)
UPER Oktober	= 0.416 * PITTU + 0.385 * ILUL + 5.7	= (R2=0.961)
UPER November	= 0.439 * PITTU + 0.543 * ILUL + 11.3	= (R2=0.925)
UPER December	= 0.566 * PITTU + 0.565 * ILUL + 28.1	= (R2=0.907)

1977/08 = 73, 1982/01 = -107, 1982/02 = -193, 1982/04 = -112, 1982/05 = -32, 1982/10 = -45, 1983/02 = -242, 1983/04 = -132, 1983/05 = -34, 1984/04 = -147, 1984/06 = 34, 1988/09 = 35, 1988/10 = -7, 1988/11 = -47, 1988/12 = -135, 1989/01 = -219, 1991/08 = 51.